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ABSTRACT

This bulletin presents findings from the Program of Research on Causes and Correlates of Delinquency. The co-occurrence or overlap of serious delinquency with drug use, problems in school, and mental health are discussed using data from the first 3 years of the program. Youth who are seriously delinquent often experience difficulties in other areas of life, and with the exception of the co-occurrence of drug use and delinquency, little is known about the overlap of these problem behaviors among youth. Specifically, co-occurrence of serious delinquency is looked at with school behavior; drug use; mental health; and the combination of these behaviors. Preliminary findings show that a large proportion of serious delinquents are not involved in persistent drug use, nor do they have persistent school or mental health problems. The problem that occurs most frequently is the use of drugs, and for males, as the number of problem behaviors increase, so does the likelihood that an individual will be a serious delinquent. Consequently, it is important to identify and address unique needs of individual youth rather than proceed with the assumption that all offenders require similar treatment. (Contains 2 figures, 8 tables, and 24 references.) (JDM)

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John J. Wilson, Acting Administrator
November 2000
JUVENILE JUSTICE BULLETIN

Co-occurrence of Delinquency and Other Problem Behaviors

David Huizinga, Rolf Loeber, Terence P. Thornberry, and Lynn Cothern

This Bulletin is part of the Office of Juvenile Justice and Delinquency Prevention (OJJDP) Youth Development Series, which presents findings from the Program of Research on the Causes and Correlates of Delinquency. Teams at the University at Albany, State University of New York, the University of Colorado, and the University of Pittsburgh collaborated extensively in designing the studies. At study sites in Rochester, New York; Denver, Colorado; and Pittsburgh, Pennsylvania, the three research teams have interviewed 4,000 participants at regular intervals for a decade, recording their lives in detail. Findings to date indicate that preventing delinquency requires accurate identification of the risk factors that increase the likelihood of delinquent behavior and the protective factors that enhance positive adolescent development.

This Bulletin examines the co-occurrence or overlap of serious delinquency with drug use, problems in school, and mental health problems. Many youth who are seriously delinquent also experience difficulty in other areas of life. However, with the exception of the co-occurrence of drug use and delinquency, little is known about the overlap of these problem behaviors in general populations. Do most youth who commit serious delinquent acts have school and mental health problems? Are most youth who have school or mental health problems also seriously delinquent? Some studies of youth who have been incarcerated or arrested suggest that the overlap of these problems is substantial (see references in Huizinga and Jakob-Chien, 1998). However, not all youth involved in illegal behaviors are arrested or come in contact with the juvenile justice system. Understanding the extent of overlap of these problem behaviors requires studies based on representative samples drawn from complete populations of youth, where the examination of overlap is not limited to particular subgroups defined by official delinquency, school issues, or mental health status. However, there are only a few studies of national or community samples that examine these issues.[1]

Answers to the questions posed above are important because a large overlap may indicate general risk factors that prevention and intervention initiatives should address. On the other hand, a small overlap may indicate that prevention and intervention initiatives should be more tailored to risk factors related to the specific problem behaviors of individual youth.

[1] See, for example, Elliott and Huizinga, 1989; Elliott, Huizinga, and Menard, 1989; Huizinga, Loeber, and Thornberry, 1993.

From the Administrator

Seriously delinquent youth often exhibit other problem behaviors. Understanding the extent of overlap between delinquency and these other problem behaviors is important for developing effective prevention strategies and targeted interventions.

Using data from the first 3 years of OJJDP's Program of Research on the Causes and Correlates of Delinquency, this Bulletin examines the co-occurrence of serious delinquency with specific problem areas: school behavior, drug use, mental health, and combinations of these behaviors.

Preliminary findings show that a large proportion of serious delinquents are not involved in persistent drug use, nor do they have persistent school or mental health problems; that the problem that co-occurs most frequently with serious delinquency is drug use; and that, for males, as the number of problem behaviors other than delinquency increases, so does the likelihood that an individual will be a serious delinquent.

These findings emphasize the importance of identifying and addressing the unique needs of individual youth, rather than proceeding under the assumption that all offenders require similar treatment, to most effectively prevent and reduce serious, chronic delinquency.

John J. Wilson
Acting Administrator

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Many youth are only intermittently involved in serious delinquency, violence, or gang membership, and involvement often lasts only a single year during adolescence.[2] For this reason, of greater concern are youth who have a more sustained involvement in delinquency, whose involvement is often considered more problematic and serious. Thus, this Bulletin is based on research that focuses on persistent serious delinquency and persistent school and mental health problems lasting 2 years or more.

One of the few current research projects that has adequate information to allow an examination of the co-occurrence of persistent problem behaviors in general populations is OJJDP's Program of Research on the Causes and Correlates of Delinquency. The data presented in this Bulletin come from the first 3 years of this project. The Program of Research involves the Denver Youth Survey, the Pittsburgh Youth Study, and the Rochester Youth Development Study. These studies use prospective longitudinal designs, which allow examination of developmental processes over the life course. The projects involved more than 4,000 inner-city children and youth who, at the beginning of the research (1987–88), ranged in age from 7 to 15 years. Researchers interviewed these children and one parent of each child in private settings at regular intervals.

The selection of youth varied from study to study. The Denver Youth Survey sample consists of 1,527 youth (806 boys and 721 girls) who were ages 7, 9, 11, 13, and 15 in 1987. These respondents came from the more than 20,000 households randomly drawn from high-risk neighborhoods in Denver, CO. The Pittsburgh Youth Study began by randomly sampling boys who were in the first, fourth, and seventh grades in public schools in Pittsburgh, PA, in 1987. Through interviews with each boy, his parent, and his teacher, researchers selected the 30 percent of these boys who had the most disruptive behavior. The final Pittsburgh sample consists of 1,517 boys, including the 30 percent who were the most disruptive; the remainder were randomly selected. The Rochester Youth Development Study sample consists of 1,000 randomly selected students who were in the seventh and eighth grades in public schools in Rochester, NY, in the spring semester of the 1988 school year.

[2] Elliott, Huizinga, and Morse, 1986; Huizinga, Esbensen, and Weiher, 1994; Thornberry et al., 1993; Esbensen and Huizinga, 1993.

Table 1: Number of Years of Involvement in Problem Behavior

Number of Years	Percentage of Males			Percentage of Females	
	Denver	Pittsburgh	Rochester	Denver	Rochester
	Serious Delinquency				
0	48.6	42.4	58.3	75.3	77.5
1	27.8	28.0	21.4	19.5	17.4
2	14.7	19.7	14.0	4.2	3.9
3	9.0	10.0	6.3	1.0	1.1
	Drug Use				
0	66.4	61.4	69.7	72.1	68.1
1	19.4	23.5	13.9	17.3	19.7
2	7.9	9.7	9.0	6.7	7.3
3	6.3	5.3	7.5	3.9	4.9
	Poor Academic Grades in School				
0	80.3	80.7	86.7	85.5	86.6
1	15.6	18.0	9.3	11.0	10.8
2	3.2	1.1	3.5	3.2	2.6
3	0.9	0.2	0.5	0.2	0.0
	Externalizing Behavioral Problems*				
0	82.9	83.0	74.4	84.3	82.3
1	11.4	9.4	13.7	11.0	8.2
2	5.6	4.6	9.2	4.7	6.3
3	—	3.0	2.8	—	3.2

*Behavioral problems such as hyperactivity and aggression. This measure is available for only 2 years at the Denver site.

This Bulletin summarizes the findings of these studies to give a picture of the co-occurrence of persistent serious delinquency with persistent drug use, problems in school, mental health problems, and combinations of these problems. For the purposes of this Bulletin, persistent serious delinquency is defined as involvement as an offender in serious assault or serious property offenses in at least 2 of the 3 years examined. To avoid repetition, the use of the term "persistent" is often omitted, but it applies to all the behaviors discussed. Drug problems include the use of marijuana, inhalants, cocaine or crack, heroin, angel dust (PCP), psychedelics, amphetamines, tranquilizers, or barbiturates. School problems were defined as having below-average grades (D or F) or having dropped out of school. Mental health problems were indicated if the person was in the top 10 percent of the distribution of internalizing or externalizing symptoms[3] of a subset of items from the Child Behavior Checklist (Achenbach and Edelbrock, 1982). In all cases, persistent problems were problems that occurred in at least 2 of the 3 years examined.

[3] These terms represent broad groupings of behavioral problems—internalizing refers to personality or emotional problems and externalizing refers to behavioral problems such as hyperactivity and aggression.

Prevalence of Persistent Problem Behavior

Most problem behaviors are intermittent or transitory. Most youth who exhibit problem behaviors do so only during a single year, a pattern that holds true for all of the problems examined in this Bulletin. The next most common pattern is 2 years, and the third is 3 years (see table 1). This Bulletin focuses on persistent serious delinquency and persistent problem behavior occurring for 2 years or more.

Across all three study sites, the prevalence of persistent problem behavior was generally consistent (see figure 1). Twenty to thirty percent of males were serious delinquents; 14–17 percent were drug users; 7–22 percent had school problems; and 7–14 percent had mental health problems. In Rochester, where a greater number of males dropped out of school than in the other sites, 22 percent of males had school problems. The dropout rate for boys in

Rochester was 18.5 percent, as compared with 3.1 percent in Denver and 6.2 percent in Pittsburgh. Combining the overall figures and ignoring the high dropout rate in Rochester, roughly 25 percent of males were serious delinquents, 15 percent were drug users, 7 percent had school problems, and 10 percent had mental health problems.

Females were studied in Denver and Rochester, but not in Pittsburgh. Among females, the overall figures indicated that 5 percent were serious delinquents, 11–12 percent were drug users, 10–21 percent had school problems, and 6–11 percent had mental health problems (see figure 2). A greater proportion of males than females were persistent serious delinquents. Gender differences are small, however, when comparing drug use, problems in school, and mental health problems at each site.

Figure 1: Prevalence of Persistent Problem Behaviors Among Males

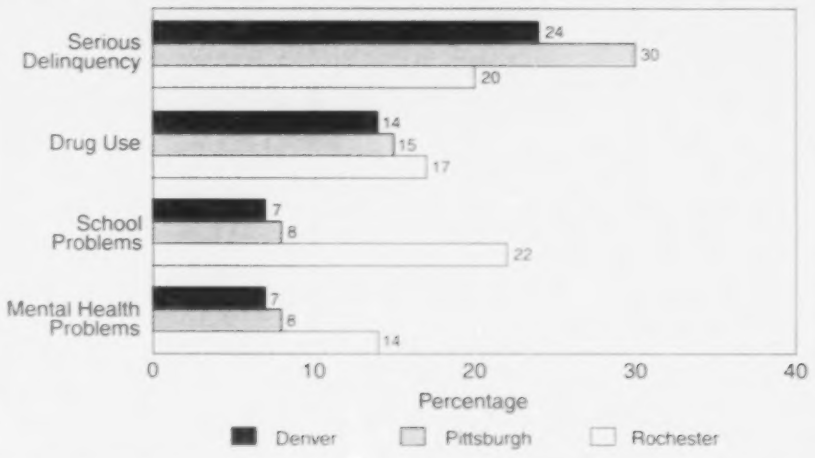
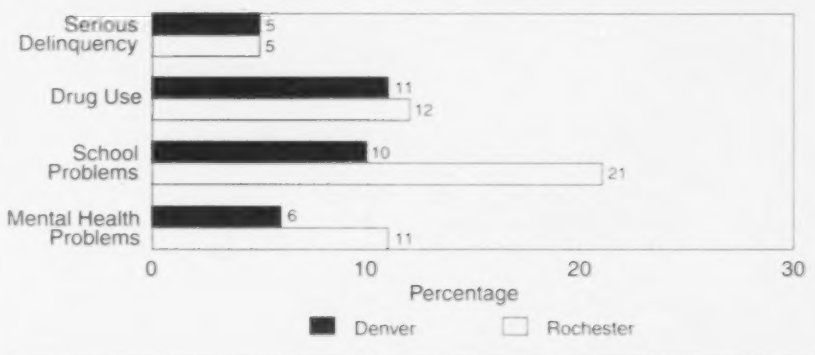


Figure 2: Prevalence of Persistent Problem Behaviors Among Females



Drug Use

The results of the Program of Research on the Causes and Correlates of Delinquency support the robust relationship between drug use and serious delinquent behavior established by other researchers over the past 25 years, although previous findings vary in the extent of overlap and strength of the relationship by age, drug, and temporal period or decade examined. (Relevant references can be found in Huizinga, Loeber, and Thornberry, 1997, and changes in the drugs-delinquency relationship over time are described in Huizinga, 1997.)

The Denver, Pittsburgh, and Rochester studies all found a statistically significant relationship between persistent delinquency and persistent drug use for both males and females (across all three sites for males and at the two sites where females were studied) (see table 2). However, a majority of persistent serious delinquents were not persistent drug users, and more than 50 percent of drug-using males and about 20 percent of drug-using females were persistent serious delinquents.

The data from the three studies indicated that 38 percent of serious male delinquents were also drug users. In Denver and Rochester, slightly more than half of drug users were serious delinquents, and in Pittsburgh, 70 percent of drug users were serious delinquents. Thus, for males, the majority of persistent serious delinquents were not drug users, but the majority of drug users were serious delinquents.

For females, the opposite was true. Slightly less than half of serious delinquents in Rochester and Denver were drug users, while only 20 percent of drug users were serious delinquents. Among females, therefore, delinquency is a stronger indicator of drug use than drug use is an indicator of delinquency.

Although the relationship between serious delinquency and drug use is statistically significant for females (at the two sites where females were studied) and for males across all three sites, a number of caveats about this relationship are necessary. First, the level of the relationship varies by site and gender. Second, even though the relationship is robust, it cannot be assumed that most delinquents are serious drug users. In fact, for both genders, the majority of serious delinquents were not drug users. Neither can it be assumed that most drug users are serious delinquents. This relationship varies by gender. Among females, for example, most drug users were not serious delinquents. However, among males, a majority of drug users were serious delinquents (70 percent in Pittsburgh). Third, the causal nature of the relationship is not clear. It has been argued that drugs cause crime, that crime leads to drug use, that the relationship is spurious (that is, crime and drug use are related only because they are both dependent on other factors), and that it is reciprocal (that is, crime leads to drug use and drug use also leads to crime). However, it is possible that each of these can be true, depending on the population, subgroup, or individual examined.

School Problems

A long history of research has demonstrated a relationship between school problems

(poor academic performance, truancy, and dropping out) and delinquency.[4] However, the meaning of the relationship is not fully understood. The three sites examined here differed substantially in the evidence each yielded about the prevalence of school problems.

The sites also differed in terms of the extent of co-occurrence of persistent school problems and persistent delinquency. For example, although not significant in Pittsburgh, there is a statistically significant relationship between school problems and delinquency for males in Denver and Rochester. However, at these two sites, less than half of the delinquents had school problems and less than half of those with school problems were delinquent (see table 3).

In Rochester, where the relationship is strongest, 41 percent of male serious delinquents had school problems, while 35 percent of those with school problems were delinquent. These figures differed in Denver, where approximately 14 percent of delinquent males had school problems, and slightly less than half of those with school problems were delinquent. In general, the overlap is significant for males, but the majority of persistent serious delinquents did not have school problems, and the majority of those with persistent school problems were not persistent serious delinquents.

The relationship is different for females. In Rochester, where slightly more than half of female serious delinquents also had school problems, the relationship is statistically significant. In Denver, only 11 percent of female serious delinquents had school problems. Among females with school problems, approximately 13 percent in Rochester and 6 percent in Denver were also serious delinquents.

An examination of academic failure and dropping out of school (each examined separately) revealed that academic failure (grades D and F) and delinquency were significantly related only for boys in Denver. Dropping out was significantly related to delinquency only in Rochester, and this relationship was significant for both genders.

These findings again indicate that broad generalizations about the relationship between persistent delinquency and other persistent problems are unwarranted. Even taking site differences into consideration, it appears that—given the large number of serious delinquents who were not having school problems—serious delinquents should not be characterized as having school problems, nor should those with school problems be characterized as persistent delinquents.

Table 2: Co-occurrence of Persistent Serious Delinquency and Persistent Drug Use

	Denver	Pittsburgh	Rochester
Males			
Delinquents who are drug users (%)	33.6%	35.7%	43.6%
Drug users who are delinquents (%)	55.8	70.4	53.6
	p=0.000	p=0.000	p=0.000
Females			
Delinquents who are drug users (%)	45.6%	NA*	48.1%
Drug users who are delinquents (%)	22.6	NA	20.0
	p=0.000		p=0.000

*NA, not available.

Table 3: Co-occurrence of Persistent Serious Delinquency and Persistent School Problems

	Denver	Pittsburgh	Rochester
Males			
Delinquents who have school problems (%)	13.9%	9.2%	40.8%
Those with school problems who are delinquents (%)	48.9	35.3	34.7
	p=0.002	p=0.374	p=0.000
Females			
Delinquents who have school problems (%)	11.3%	NA*	55.3%
Those with school problems who are delinquents (%)	5.8	NA	13.1
	p=0.999		p=0.000

Note: School problems defined as poor academic grades and dropping out combined.
*NA, not available.

Mental Health Problems

Mental health problems among offenders are a growing concern in light of the public fascination with violent crimes committed by mentally ill offenders (Howells et al., 1983; Marzuk, 1996). On the other hand, mental illness is sometimes seen as an excuse for criminal behavior (Szasz and Alexander, 1968). Many juvenile offenders who need screening and treatment for mental health problems fail to receive either (Woolard et al., 1992).

Data from the Program of Research on the Causes and Correlates of Delinquency indicated that the relationship between persistent mental health problems and persistent serious delinquency is statistically significant for males at all three sites (see table 4). For males, the presence of mental health problems, as measured in the studies, is a better indicator of serious delinquency than serious delinquency is an indicator of mental health problems. That is, less than 25 percent of male delinquents displayed mental health problems. On the other hand, of those with mental health problems, almost one-third in Rochester and almost one-half at each of the other two sites were serious delinquents.

The relationship is statistically significant for females only in Rochester, where

[4] Brier, 1995; Elliott, Huizinga, and Menard, 1989; Elliott and Voss, 1974; Fagan and Pabon, 1990; Gold and Mann, 1984; Gottfredson, 1981; Maguin and Loeber, 1996; O'Donnell et al., 1995; Thornberry, Esbensen, and Van Kammen, 1991; Thornberry, Moore, and Christenson, 1985.

Table 4: Co-occurrence of Persistent Serious Delinquency and Mental Health Problems

	Denver	Pittsburgh	Rochester
Males			
Delinquents who have mental health problems (%)	13.0%	13.5%	21.1%
Those with mental health problems who are delinquents (%)	46.2	45.9	31.4
	p=0.005	p=0.015	p=0.019
Females			
Delinquents who have mental health problems (%)	0.0%	NA*	33.7%
Those with mental health problems who are delinquents (%)	0.0	NA	16.7
	p=0.240		p=0.000

*NA, not available.

Table 5: The Overlap of Persistent Serious Offending and Combinations of Other Persistent Problems Among Males

	Persistent Serious Delinquents Who Have Persistent Problems			Those With Persistent Problems Who Are Persistent Serious Delinquents*		
Problem	**Denver**	**Pittsburgh**	**Rochester**	**Denver**	**Pittsburgh**	**Rochester**
None	55.2%	56.4%	38.8%	16.8%	22.3%	12.1%
Drug use only	21.4	24.3	17.7	49.1	65.4	45.7
School only	4.9	2.9	7.2	30.7	19.0	15.1
Mental health only	4.6	5.0	5.6	30.3	30.4	18.3
Drug use and school	6.4	4.3	17.2	(78.5)	(75.0)	64.3
Drug use and mental health	4.9	5.7	3.2	(73.6)	(88.9)	(65.2)
School and mental health	1.8	0.0	4.7	(66.7)	(0.0)	(33.2)
Drug use, school, and mental health	0.9	1.4	5.6	(50.0)	(100.0)	(50.4)

*Figures in parentheses are based on sample sizes too small to be considered reliable. They are presented to show consistent effects of multiple problems.

one-third of females who were serious delinquents also had mental health problems. At the same time, only 17 percent of those with mental health problems were serious delinquents. This relationship is the reverse of that seen in males. Thus, at least in the case of Rochester, the presence of delinquency among females is a better indicator of mental health problems than mental health problems are an indicator of delinquency.

Combinations of Persistent Problems

Allowing for the higher rate of school problems in Rochester, the relationship between persistent serious delinquency and combinations of other persistent problem behaviors is fairly consistent across the sites studied (see tables 5 and 6). First, more than half of the male serious delinquents in Denver and Pittsburgh and more than half of the female serious delinquents in Denver display no other problems; in Rochester, the figure is roughly 40 percent for both genders. Second, drug use, alone or in combination with other problems, is the most common problem for both male and female delinquents and provides a moderate risk of serious delinquency.

Another way to examine combinations of problems is by a count of problems. The largest proportion of male serious delinquents (39–56 percent across all sites) had none of the persistent problems examined in this Bulletin, followed in decreasing order by those having one problem (30–32 percent) and those with two or more problems (11–31 percent) (see table 7). However, among those with problems, as the number of problems increases, so does the chance of being a serious delinquent. More than half (55–73 percent) of those with two or more problems were also serious delinquents.

For females, the relationship was different and varied by site (see table 8). In Rochester, more than half of female delinquents were involved in two or more problem behaviors; in Denver, this figure was about 11 percent. In Rochester, approximately one-third of females with multiple problem behaviors were serious delinquents; in Denver, 15 percent were serious delinquents. The findings about girls are thus site specific, and generalizations are unwarranted.

Summary

Serious delinquency, drug use, school problems, and mental health problems are most likely to be intermittent in nature. For all sites, the most common temporal pattern of each problem behavior was that it occurred for only 1 year. The next most common pattern was occurrence for 2 years, and then occurrence for 3 years. This Bulletin examines only persistent problem behavior lasting 2 years or more. There are some consistent findings about the co-occurrence of persistent serious delinquency and other persistent problem behaviors across all three sites of the Program of Research on the Causes and Correlates of Delinquency.

First, a large proportion of persistent serious delinquents are not involved in persistent drug use, nor do they have persistent school or mental health problems. Although a significant number of offenders have other problems and are in need of help,

Table 6: The Overlap of Persistent Serious Offending and Combinations of Other Persistent Problems Among Females

Problem	Persistent Serious Delinquents Who Have Persistent Problems		Those With Persistent Problems Who Are Persistent Serious Delinquents	
	Denver	Rochester	Denver	Rochester
None	54.4%	39.9%	3.7%	3.0%
Drug use only	34.4	3.6	22.4	3.1
School only	0.0	3.6	0.0	1.6
Mental health only	0.0	0.0	0.0	0.0
Drug use and school	11.3	21.7	(—)*	24.2
Drug use and mental health	0.0	7.8	(—)	(—)
School and mental health	0.0	8.3	(—)	(—)
Drug use, school, and mental health	0.0	15.1	(—)	(—)

*Represent estimates based on sample sizes too small to be considered reliable.

Table 7: Number of Persistent Problems and Persistent Serious Delinquency Among Males

Number of Problems	Persistent Serious Delinquents Who Have Persistent Problems			Those With Persistent Problems Who Are Persistent Serious Delinquents		
	Denver	Pittsburgh	Rochester	Denver	Pittsburgh	Rochester
0	55.2%	56.4%	38.8%	16.8%	22.3%	12.1%
1	30.9	32.1	30.5	41.4	46.9	26.1
2 or more	13.9	11.4	30.7	70.0	72.7	54.7

Table 8: Number of Persistent Problems and Persistent Serious Delinquency Among Females

Number of Problems	Persistent Serious Delinquents Who Have Persistent Problems		Those With Persistent Problems Who Are Persistent Serious Delinquents	
	Denver	Rochester	Denver	Rochester
0	54.4%	39.9%	3.7%	3.0%
1	34.4	7.3	9.6	1.6
2 or more	11.3	52.9	15.4	36.1

persistent offenders as a group cannot be characterized as having other problems.

Second, although less than half of persistent offenders are persistent drug users, the problem that co-occurs most frequently with persistent serious delinquency (for males and females) is persistent drug use. Among males who were serious delinquents, 34–44 percent were also drug users; 46–48 percent of female serious delinquents were also drug users.

Third, for males, as the number of persistent problems other than delinquency increases, so does the likelihood that an individual will be a persistent serious delinquent. A combination of persistent drug, school, and mental health problems is a reasonably strong risk factor for persistent serious delinquency.

Fourth, while the co-occurrence of persistent problems and persistent serious delinquency is an important issue, the findings cited above show that serious delinquency does not always co-occur with other problems. For some youth, involvement in serious delinquency and other problems go together. For others, however, involvement in serious delinquency does not indicate the presence of other problems; conversely, a youth experiencing other persistent problems is not necessarily a persistent serious delinquent.

Fifth, the degree of co-occurrence between persistent serious delinquency and other persistent problems is not overwhelming, but the size of the overlap suggests that a large number of persistent serious delinquents face additional problems that need to be addressed. Careful identification of the configuration of problems facing individual youth is needed. This is necessary so that delinquent youth with serious persistent problems are treated for those problems, and youth who do not warrant intervention are not treated, since such treatment may be unnecessary or may have criminogenic effects. The magnitude of the overlap of delinquency and other persistent problems suggests that not all delinquent youth require interventions such as mental health services or remedial education. Rather, attention to the unique needs of individual youth is necessary.

For Further Information

For more information on OJJDP's Causes and Correlates studies or to obtain copies of other OJJDP publications, contact the Juvenile Justice Clearinghouse (JJC) at 800–638–8736 (phone), 301–519–5600 (fax), or www.ncjrs.org/puborder (Internet). JJC also maintains a Causes and Correlates of Delinquency Web page (www.ojjdp.ncjrs.org/ccd/index.html).

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Program of Research on the Causes and Correlates of Delinquency

The Program of Research on the Causes and Correlates of Delinquency is an example of OJJDP's support of long-term research in a variety of fields. Initiated in 1986, the Causes and Correlates program includes three closely coordinated longitudinal projects: the Pittsburgh Youth Study, directed by Dr. Rolf Loeber at the University of Pittsburgh; the Rochester Youth Development Study, directed by Dr. Terence P. Thornberry at the University at Albany, State University of New York; and the Denver Youth Survey, directed by Dr. David Huizinga at the University of Colorado. The Causes and Correlates program represents a milestone in criminological research because it constitutes the largest shared-measurement approach ever achieved in delinquency research. From the beginning, the three research teams have worked together with similar measurement techniques, thus enhancing their ability to generalize their findings.

Although each of the three projects has unique features, they share several key elements:

- All three are longitudinal investigations that involve repeated contacts with the same juveniles over a substantial portion of their developmental years.
- In each study, researchers have conducted face-to-face interviews with adolescents in a private setting. By using self-report data rather than juvenile justice records, researchers have been able to come much closer to measuring actual delinquent behaviors and ascertaining the age at onset of delinquent careers.
- Multiple perspectives on each child's development and behavior are obtained through interviews with the child's primary caretaker and teachers and from official school, police, and court records.
- Participants are interviewed at regular and frequent intervals (6 or 12 months).
- Sample retention has been excellent. As of 1997, at least 84 percent of the participants had been retained at each site, and the average retention rate across all interview periods was 90 percent.
- The three sites have collaborated to use a common measurement package, collecting data on a wide range of variables that make possible cross-site comparisons of similarities and differences.

Each project has disseminated the results of its research through a broad range of publications, reports, and presentations. In 1997, OJJDP initiated the Youth Development Series of Bulletins to present findings from the Causes and Correlates program. In addition to the present Bulletin, six other Bulletins have been published in the Youth Development Series: *Epidemiology of Serious Violence, Gang Members and Delinquent Behavior, In the Wake of Childhood Maltreatment, Developmental Pathways in Boys' Disruptive and Delinquent Behavior, Family Disruption and Delinquency,* and *Teenage Fatherhood and Delinquent Behavior.*

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